Province of
British Columbia
Ministry
of Forests

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PROPOSED ACTION PLAN FOR THE IMPLEMENTATION OF RECOMMENDATIONS FROM THE REPORT

"REVIEW OF THE TIMBER SUPPLY ANALYSIS PROCESS FOR BRITISH COLUMBIA TIMBER SUPPLY AREAS"

APRIL 1991

PREFACE

In the spring of 1990 the Executive of the B.C. Forest Service initiated an internal review of the processes leading to the determination of allowable annual cuts for Timber Supply Areas. The results of that study and its recommendations have been summarised in a report entitled "Review of the Timber Supply Analysis Process for British Columbia Timber Supply Areas".

The action plan contained in the following pages should be considered a companion document to that report. It outlines a process to implement the recommendations from the review.

The action plan will require input from, and participation of, all of the Forest Service if it is to succeed. We will be scheduling presentations to Forest Service staff in Regions and in Victoria to receive your comments. If, after those sessions, you wish to provide any additional comments, please submit them to the Director, Integrated Resources Branch by June 30, 1991.

After review of all responses, we will be circulating another version of the action plan for your endorsement.

J.R. Cuthbert
Chief Forester

W. Cheston
Assistant Deputy Minister
Operations Division

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Proposed Action Plan for the Implementation of Recommendations from the Report "Review of the Timber Supply Analysis Process for British Columbia Timber Supply Areas"

INTRODUCTION

During 1990 the Forest Service conducted an internal review of the planning processes leading to the setting of the allowable annual cuts (AACs) for Timber Supply Areas (TSAs). That study culminated in a recommendations report "Review of the Timber Supply Analysis Process for Timber Supply Areas". The Chief Forester has asked that a proposed action plan to implement the report recommendations be circulated with the report for Forest Service staff review and feedback.

It is vital that the Forest Service consistently meet its responsibility for timber supply planning for the purpose of AAC determination. Moreover, it is critical that this function be carried out within a broader integrated resource management framework.

The Forest Service is currently exploring a forest land management process as a substantial revision to the current TSA planning process. The revised process will examine all potential forest land uses in a balanced fashion. It is proposed that all those resources (including, for example, range, recreation, wildlife, as well as timber) will be systematically assessed as part of this broadened process. This more comprehensive land-oriented process will establish the forest land use context within which AAC determination will occur.

The following contains the proposed action plan. There are four sections, or themes: Policy, Organisation, Technical, and Communication and Training. Each section starts with a statement and guiding principles followed by specific tasks to be undertaken. The plan is intentionally general. Specifics will be determined after Forest Service review has taken place.

PROPOSED ACTION PLAN

THEME 1: POLICY

The Ministry must have consistent and comprehensive policies and procedures to guide timber supply planning within an integrated resource management framework.

The principles guiding timber supply policy, to provide a regulated forest with maximum sustained yield, have their roots in European forestry and were applied in British Columbia in the 1940's following the Sloan Royal Commission. The principles were embedded in the formula used to calculate the (AAC) which assumed old slow-growing forests would be converted, over a period of one rotation, to young fast-growing forests with a balanced age class structure.

These strategies were modified somewhat in 1979 with the replacement of the AAC formula by forest estate models which permitted a broader range of polices to be analyzed. Economic operability, environmentally sensitive areas and intensive management options were considered. Although the original guiding principles were still being applied, they were modified to ensure a smooth transition from the first (old-growth) to the second rotation and future harvests which would never decline below the long run sustained yield (LRSY) even though current AAC levels were, in some cases, greater than the LRSY.

In recent years, concern has been expressed with B.C.'s timber supply policy. Not only is it not well articulated and understood, there is a growing debate as to its continued relevancy. This is manifested in questions on subjects such as fall-down, over-cutting, extent of clear-cutting, smaller community-based management units, liquidation of old growth and loss of bio-diversity.

Many factors have changed. The forests of B.C. are no longer made up of predominantly old forests. We are about halfway through the first rotation and must plan for the transition to the second rotation of managed stands. Communities want more say in the management of their forests. Natives want access and control over natural resources and land claims cover much of B.C. There is greater concern for environmental sustainability. New forests, and forest policy, must be designed to meet society's needs. Integrated resource management strategies must provide an appropriate mix of high-yield managed forests, old growth and other types of forests, ensuring both economic benefits and environmental sustainability.

Changing public values and changing timber supply, coupled with out-of-date policy which is not well articulated and understood, indicate an overwhelming need to review, develop, and communicate the ministry's policy on timber supply, sustained yield, and AAC as well as the reviewing the definition and delineation of B.C.'s Page timber supply management units. In conjunction with this policy review, revised operating procedures and processes for carrying out timber supply planning must be developed.

Descriptions of the specific action plan activities follow:

Task #1

Task: Establish planning processes which integrate timber supply and forest land use planning.

Recommendation addressed: 1

Discussion:

Timber supply planning has evolved from a simple AAC calculation to an analysis of timber supply options within a decision-making process. The next evolutionary stage, already underway, is the integration of timber supply planning into a broader planning framework which identifies a range of forest land uses and documents decisions on integrated forest land use.

Separate, but linked processes are proposed: Forest land use planning which leads to decisions on land use and timber supply planning which leads to decisions on the AAC and timber management strategies. Each uses timber supply analysis.

The proposed forest land use planning process will use inter-agency teams and include substantial public participation to identify and assess forest land use options on an ongoing basis. Timber supply analysis, along with analyses of other resources, will support this process by assessing impacts of alternate land use strategies.

Within the context of the integrated resource decisions made in the forest land use planning process, strategies for each resource, including timber, will be developed. Timber supply strategies will be analyzed for each management unit and the AAC reviewed every five years or sooner using the best available information and current land use decisions. These analyses will explore timber management strategies such as intensive silviculture, protection, harvest scheduling and operability and will not constitute a full assessment of all resource issues.

New planning policy and processes, which replace the current TSA Planning process, are required to implement these concepts.

Responsibility: Chief Forester, Director, Integrated Resources Branch (Manager, Forest Land Use and Manager, Timber Supply)

Time frame: by September, 1992

Task #2

Task: Within the context of integrated resource management policy, review sustained yield policy for B.C.

Recommendation addressed: 21

Discussion:

The historical application of sustained yield was to convert the old slow-growing forests to a young fast-growing forest with a balanced age class structure. Once converted, the forest would be growing timber as efficiently as possible and each year the oldest age class would be harvested when its average growth rate was maximized. The next youngest age class would grow into maturity and be harvested in the subsequent period, and then the next and the next, providing a continual even-flow of supply. Harvest and growth would be balanced at a level equal to the maximum sustained yield.

In reality, the application (and definition) of sustained yield has not proven to be this simple. It assumed this strategy was operationally feasible "on-the-ground" and a certain set of public values that have now changed. Many questions are being asked: what about other resource values; is a balanced age class structure appropriate; is even-flow the best policy; how fast do we want to harvest the old growth; should we maximize volume; should the policy have a broader definition to include environmental and economic sustainability as well as sustained yield of timber supply?

These and other questions must be asked and answered as part of a review of sustained yield policy. Activities include defining "sustained yield" and developing a clear policy for its application on Crown land. This includes harvest flow policy; definition of "long run sustained yield"; and determination of the AAC. New policy should be well articulated and communicated.

Responsibility: Chief Forester, Manager, Timber Supply, Integrated Resources Branch

Time frame: by September 1992

Task #3

Task: Clarify timber supply management units

Recommendation addressed: 7; 8; 9

Discussion:

Public Sustained Yield Units (PSYUs) were amalgamated into larger management units, TSAs in 1979 to rationalize flows timber supply and to provide increased flexibility in management. Recent trends have indicated a desire to manage within smaller land units and, in fact, timber supplies are already being managed for much smaller units within TSAs (for example, operating areas and Local Resource Use Plan areas). Either official timber supply unit boundaries should be redefined and AACs and sustained yield targets established for these smaller units or field administrative procedures require review and revision in order that they operate under the same assumptions as timber supply analyses and AACs.

Activities include reviewing management unit boundaries, current administrative and management procedures, and redefining either as appropriate. Where necessary, establish AAC targets for new units and adjust apportionment.

Close participation is required from Operations Division and Timber Harvesting Branch.

Responsibility: Chief Forester, Manager, Timber Supply, Integrated Resources Branch

Time frame: by December 1994, in conjunction with 3-year AAC review the province.

Task #4

Task: Define the roles and responsibilities within the Forest Service for carrying out timber supply planning.

Recommendation addressed: 31; 32

Discussion:

Although Integrated Resources Branch is responsible for this function, timber supply analysis and planning involves almost every program. Policy which outlines the roles and responsibilities of each party is required. This policy would ensure Integrated Resources Branch receives the data and support required from the other programs in a timely manner by making them accountable as well as ensuring other programs needs for timber management strategies are met in a coordinated manner. Overlap and duplication will be avoided by clearly identifying roles and responsibilities and using a team approach.

Timber supply planning roles and responsibilities of Branch, Region, and District programs require clear definition.

Participation is required of Forestry Division Branches, Timber Harvesting Branch, Valuation Branch, Industry Development Branch, Regions, and Districts.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: by January 1, 1992

Task #5

Task: Develop and implement a policy for audit of timber supply analysis.

Recommendation addressed: 41

Discussion:

Policy is required for periodic audit of the timber supply analysis system to ensure that techniques take advantage of current technology and remain relevant to the changing needs and issues.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: by September, 1992

Task #6

Task: Revise and document operating procedures.

Recommendation addressed: 1;21;27

Discussion:

In addition to formal policy, operating procedures, standards and manuals are required to guide the analysis process and ensure adequate quality control. These procedures would provide direction to the analysts and planners directly involved with timber supply planning.

Activities include appropriate revision of existing manuals or development of new ones to adequately describe timber supply planning and analysis procedures.

Participation of Forestry Division Branches, Regions, and Districts is required.

Responsibility: Manager, Timber Supply Planning

Time frame: by September, 1992

Task #7

Task: Strengthen and enforce the standards, responsibilities and procedures for the development, approval, and application of inventory data, growth yield projections, and forest estate models on Crown lands.

Recommendation addressed: 13; 25; 26

Discussion:

Standards are required for:

1. Inventory quality and use,
2. Timber supply data quality and use,
3. Growth and yield models and projections, and
4. Forest estate models and their application on Crown lands.

Responsibility: Managers, Forest Productivity and Decision Support, Research Branch; Growth and Yield, Inventory Branch; and Timber Supply, Integrated Resources Branch

Time frame: January, 1992

Task #8

Task: Conduct a review of processes for timber supply analysis leading to AAC determination for Tree Farm Licences (TFLs).

Recommendation addressed: NA

Discussion:

TFLs are managed under many of the same objectives as TSAs. In order to ensure analytical and policy consistency between TSAs and TFLs, it is necessary that a study similar to the study which has motivated this action plan be also conducted for TFLs.

The duties under this task will be to determine the terms of reference for the review and composition of a review team, and to conduct the review itself.

Responsibility: Director, Timber Administration Branch and Director, Integrated Resources Branch.

Time Frame: September, 1992.

THEME 2: ORGANIZATION

The Forest Service is committed to improving the support and profile of the timber supply planning function for the province.

The Forest Service timber supply organization does not adequately support the its critical obligations for estimating timber supply and determining AACs. The identified problems concern both the structure of the timber supply organization and the level of staff and other resources that are deployed within that organization.

Given the importance of timber supply decisions, it is essential that the Forest Service develop "depth" in its timber supply staff resources and expertise.

Total staffing within the timber supply program must be enlarged, and this staff must be well-supported and well-trained. Timber supply must be recognised as a career area in its own right, with appropriate career opportunities.

Specific actions in Timber Supply Organization:

1. Headquarters Structure: The primary structural change at headquarters involves the creation of a new Timber Supply Section within Integrated Resources Branch.

   In order to provide a Manager-level leader and a core of headquarters support staff as soon as possible to carry forward the implementation of the balance of this action plan, this initial step has proceeded in advance of this plan.

   Although no additional major structural change at headquarters is proposed, questions of staff complement, staff deployment, and within section structures for all affected Branches must be addressed.

2. Regional Organisation: The short-term deployment of new timber supply analysis specialist positions in the Forest Service regional offices is an immediate staffing priority. It is envisaged that these analysis positions in Regions will be charged with delivering a large portion of analysis services for their Region and Districts, with specific responsibilities as confirmed below.

Descriptions of the specific action plan activities follow:

Task #9

Task: Design the long term internal structure of the Timber Supply Section of Integrated Resources Branch and the links with other Branches.

Recommendation addressed: 32

Discussion:

Managing timber supply is a vital responsibility of the ministry, and must be recognised as a distinct function. Consequently, a fully dedicated "timber supply unit" should be established at the headquarters level of the ministry.

This organizational unit would be charged both with technical support functions in timber supply analysis, and with coordinating the development of timber supply policy on behalf of the Chief Forester.

These activities include determining staff requirements in the Timber Supply Section in Integrated Resources Branch; designing any enhancements to the appropriate sections in Research, Inventory and other branches; and to coordinate requests for additional staff resources across Branches.

Coordination is necessary with the Director, Inventory Branch; Manager, Forest Productivity and Decision Support, Research Branch, and appropriate managers and directors of other branches.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: by October 1991

Task #10

Task: Confirm medium to long term distribution of responsibilities among Branches and Regions and design and set priorities for staff deployment at Headquarters.

Recommendation addressed: 30; 32

Discussion:

Coupled with the establishment of the Timber Supply Section at headquarters, a teamwork approach to the timber supply function within the Ministry of Forests is essential and must be confirmed.

The timber supply analysis and AAC determination cannot be addressed through a single organizational unit within the ministry. Rather, this important function must be managed through a team-style approach applying across the ministry organization. Regions, Districts, and various headquarters Branches will all play important and clearly defined roles.

A task-specific working group should provide a framework of responsibilities and recommend long term staffing design for all Branches directly involved in timber supply analysis services. Active participation from Forestry Division and Human Resources Branches is anticipated. All Regions are to provide input on anticipated regional responsibilities. Forestry Division directors are to review and table recommendations with Operations Division Management Team for comment, prior to final submission for Executive approval.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: by July 1, 1991

Task #11

Task: Establish new timber supply analysis specialist positions in Regions.

Recommendation addressed: 30; 32

Discussion:

This will involve determining staff requirements; confirming staffing availability; developing job descriptions and obtaining classification; and coordinating recruitment and selection. Participation of Regional Forestry Managers is necessary as these positions fall under their jurisdiction.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: by October 1991

THEME 3: TECHNICAL

The Chief Forester must have accurate, timely, and credible timber supply information to support AAC and resource management decisions.

There are two major components to the achievement of this goal:

1. Analysis--Analyses must be accurate, timely, and credible. While analyses are performed on a TSA basis for the purpose of determining a TSA AAC and defining a TSA plan, they must also contribute to a provincial perspective, for assisting in the development of broad Ministry policies and programs.

2. Research and Development--Timber supply analysis tools and techniques (including computer models, data, and monitoring activities) must be under constant review and enhancement in order to stay current with continually evolving forest management objectives.

Both of these components involve the cooperation and participation of all programs, Regions, and Branches in order that the collection, application, and use of data and timber supply analytical techniques within and outside the Forest Service are performed with consistency and integrity.

Descriptions of the specific action plan activities follow:

Task #12

Task: Accelerate production of managed stand yield estimates.

Recommendation addressed: 11; 12

Discussion:

This activity is already in progress, as instructed by the Chief Forester.

Responsibility: Manager, Forest Productivity and Decision Support, Research Branch

Time frame: by June 1991

Task #13

Task: Develop and implement a system for performing timber supply analyses.

Recommendation addressed: 1

Discussion:

Three types of analyses are necessary to provide continuity between management practices, land use planning, timber supply analysis, and AAC determination:

1. Responsive, day-to-day analyses are to provide background information on issues requiring more immediate attention (for example, budget preparation, licence proposals, implications of new or proposed policy, critical issues etc.).

2. Timber supply analyses supporting a broader forest land use planning strategy. These analyses will investigate the timber supply impacts for alternate land-use options and possibly determine the interaction of alternative forest management programs with various land-use strategies.

3. Analyses leading to a TSA AAC review. These analyses should be performed at least every 5 years and incorporate only those management practices and decisions currently implemented and the most recently available data. They are considered technical updates of past issues which have been resolved rather than an exploration of outstanding issues yet to be resolved. (Resolution of outstanding issues are more the focus of the first two categories of analysis).

An immediate priority is to conduct these AAC-review analyses for all TSAs by December, 1994. The purpose of this 3-year review is to bring AACs up to date with current management practices.

As the Forest Service's planning process is presently evolving towards an integrated forest land-use planning focus, the role of and procedures for the timber supply planning process must similarly evolve. It is essential that there continue to be the facility for public input and the exploration of the issues relating to timber supply (as exist in the present TSA planning system). (See Task #5)

Duties within this task include more specific clarification of the purpose of each of the above categories of analysis and who holds the responsibility for analysis completion.

Participation from the Operations Division is necessary for this task as Region and District staff will play an increased role in the timber supply analysis process.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: ongoing

Task #14

Task: Develop and implement a system for routine monitoring of inventory and timber supply projections.

Recommendation addressed: 18; 19; 20; 37

Discussion:

Various opportunities exist to monitor and provide feedback information for the improvement of inventory and timber supply projections:

1. Comparison of cutting permit cruise estimates, scaled volumes, and inventory volume estimates with each other. This will allow the identification of areas where more local volume estimates are required (possibly through improved stratification and incorporation of cruise information).

2. Comparison of licensee activity with the assumptions used in timber supply analyses. This will provide refined operability assumptions and closer agreement between field practices, timber supply analysis, and AAC determination.

3. Comparison of results of re-inventory and inventory projection for the same areas. This will provide an audit of inventory update procedures.

4. Monitoring of the growth and yield of operationally established and treated stands to allow refinement of inventory update procedures and adjustments for use with research growth and yield results.

Since some of the monitoring duties will be performed in Regions and Districts, their participation is necessary in order to determine the procedures and responsibilities.

Responsibility: Director, Inventory Branch

Time frame: by April 1994

Task #15

Task: Develop and implement improved Inventory program data management and quality control procedures.

Recommendation addressed: 23; 24; 25

Discussion:

The following activities have been identified as necessary in order to improve confidence and reliability in inventory and timber supply estimates:

1. Activities include reconciliation of data with maps so that the two draw from the same data bases;

2. Development and implementation a single data standard for all data;

3. Implementation of a system of audits for all phases of inventory data development;

4. Development of a manual of inventory management procedures and standards.

Responsibility: Director, Inventory Branch

Time frame: by December 1991

Task #16

Task: Incorporate immediate enhancements to the timber supply analysis system to better account for current management practices.

Recommendation addressed: 2; 3; 4; 5; 6; 14; 15; 16; 17; 29; 33; 34; 36; 38; 39; 42; 43;

Discussion:

Enhancements are required in the timber supply analysis system in the following topic areas:

- Harvest pattern restrictions (deferrals) for non-timber considerations
- Missed timber strips (for buffers and inaccessible pockets),
- Site degradation
- Future land base withdrawals which have a high likelihood of occurring (such as for roads and landings)
- Inventory data aggregation procedures
- Sensitivity analysis
- Completion of the MUSYC model documentation
- Implementing a more balanced use of modelling approaches
- Financial and spatial considerations relating to operability
- AAC and operating area allocation
- Fire and pest impacts
- Quality control of analyses

The first phase of this activity will derive methods for providing interim estimates of timber supply impacts (possibly using "rules of thumb") for immediate use in "status quo" analyses. The second phase will involves continual development, refinement, and implementation of techniques.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: first phase by September 1991; further improvements ongoing

Task #17

Task: Resolve allowable harvest age and rotation age issues and uncertainties in timber supply analyses.

Recommendation addressed: 35; 36

Discussion:

There is a great deal of confusion surrounding harvest age assumptions made in timber supply analyses and their impacts on results. Some of this is due to poor use of terms (for example "culmination age" and "rotation age" are used often used synonymously) as well as a poor understanding of how the harvest of timber is modelled (which is usually by applying a harvest-age range rather than a strict rotation age).

The following activities are proposed:

1. Verify the reliability of estimates of age of culmination of mean annual increment taken from yield curves by comparing these with culmination age estimates based on Inventory Branch temporary sample plot data.

2. Determine how estimates of long run sustained yield (LRSY) change when ANY assumed rotation age is uncertain. The assumed uncertainty will be, in part, based on 1. as well as the uncertainty in the ability of harvest operations to discern or harvest precisely at some desired rotation age.

3. Implement routine timber supply analyses procedures based on 1. and 2. to determine the sensitivity of results to changes in allowable harvest-age ranges (see also, action plan for sensitivity analyses).

Responsibility: Manager, Growth and Yield, Inventory Branch, and Leader, Timber Supply Analysis Development, Timber Supply, Integrated Resources Branch

Time frame: by September 1991

THEME 4: COMMUNICATION AND TRAINING

Forest Service staff at all levels should be conversant with the underlying concepts and policies for timber supply analysis and AAC determination. Staff who are closely involved in inventory and planning functions should be familiar with the purpose, design, and procedures for the Forest Service forest inventory and timber supply analysis system.

Descriptions of the specific action plan activities follow:

Task #18

Task: Develop and implement a long-term strategy for a communication and training program for appropriate Forest Service staff, industry, and public.

Recommendation addressed: 22

Discussion:

Communication and training tools are required to serve a variety of functions:

1. A convenient communications tool (for example, notes, video, or slide presentation) which explains the concepts and issues of timber supply and AAC determination. This package should be deliverable to any audience (for example, forest industry, public, or other government agency). Appropriate BCFS staff should receive this training as a mandatory exercise.

2. A convenient communications tool which describes the timber supply analysis process, for presentation to any individual (BCFS or otherwise) involved in providing information for this process.

3. A series of two-day workshops for BCFS staff more closely associated with the timber supply analysis process (in growth and yield, inventory, or planning capacities) on inventory processes and purposes; stand dynamics and growth and yield; and forest-level and timber supply concepts.

4. A course to be provided, as necessary, to BCFS timber supply analysis staff (Branch or Region) which provides the technical details of modelling concepts and timber supply model approaches, structure, and design.

Since the major focus of this training and communications exercise will be Region and District staff (either as receivers of training or as deliverers of communications), participation of Regions and Districts in the determination of the appropriate content and methods of delivery is necessary.

Responsibility: Manager, Timber Supply, Integrated Resources Branch

Time frame: January 1, 1992

Task #	Task	Responsibility	By
1	Establish integrated planning processes	Chief Forester, Director, Integrated Resources, Manager, Forest Land Use and Manager, Timber Supply	September, 1992
2	Review sustained yield policy	Chief Forester and Manager, Timber Supply	September 1992
3	Clarify timber management units	Chief Forester and Manager, Timber Supply	December 1994
4	Define roles and responsibilities	Manager, Timber Supply	January, 1992
5	Develop and implement audit policy	Manager, Timber Supply	September, 1992
6	Revise and document operating procedures	Manager, Timber Supply	September, 1992
7	Inventory, growth and yield, and forest estate model standards	Managers, Forest Productivity and Decision Support, Growth and Yield, and Timber Supply	January, 1992
8	TFL review	Director, Timber Administration and Director, Integrated Resources	September, 1992
9	Timber Supply Section Organisation	Manager, Timber Supply	October, 1991
10	Branch and Region Responsibilities	Manager, Timber Supply	July, 1991
11	Establish Region timber supply analysts	Manager, Timber Supply	October, 1991
12	Production of managed stand yield estimates	Manager, Forest Productivity and Decision Support	June, 1991
13	Implement system for timber supply analysis	Manager, Timber Supply	ongoing
14	Implement system for monitoring	Director, Inventory	April, 1994
15	Implement inventory quality control	Director, Inventory	December, 1991
16	Enhancements to timber supply analysis system	Manager, Timber Supply	September, 1991
17	Resolve AAC and rotation age issues	Manager, Growth and Yield, and Leader, Timber Supply Analysis Development	September 1991
18	Communications and training	Manager, Timber Supply	January, 1992

By	Task	Responsibility
June, 1991	Production of managed stand yield estimates	Manager, Forest Productivity and Decision Support
July, 1991	Branch and Region Responsibilities	Manager, Timber Supply
September, 1991	Enhancements to timber supply analysis system	Manager, Timber Supply
September 1991	Resolve AAC and rotation age issues	Manager, Growth and Yield, and Leader, Timber Supply Analysis Development
October, 1991	Establish Region timber supply analysts	Manager, Timber Supply
October, 1991	Timber Supply Section Organisation	Manager, Timber Supply
December, 1991	Implement inventory quality control	Director, Inventory
January, 1992	Communications and training	Manager, Timber Supply
January, 1992	Define roles and responsibilities	Manager, Timber Supply
September, 1992	Establish integrated planning processes	Chief Forester, Director, Integrated Resources, Manager, Forest Land Use and Manager, Timber Supply
January, 1992	Inventory, growth and yield, and forest estate model standards	Managers, Forest Productivity and Decision Support, Growth and Yield, and Timber Supply
September, 1992	Develop and implement audit policy	Manager, Timber Supply
September 1992	Review sustained yield policy	Chief Forester and Manager, Timber Supply
September, 1992	Revise and document operating procedures	Manager, Timber Supply
September, 1992	TFL review	Director, Timber Administration and Director, Integrated Resources
April, 1994	Implement system for monitoring	Director, Inventory
December 1994	Clarify timber management units	Chief Forester and Manager, Timber Supply
ongoing	Implement system for timber supply analysis	Manager, Timber Supply